Vaughn Water Company, Inc.

Bakersfield, California

2015 URBAN WATER MANAGEMENT PLAN

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VAUGHN WATER COMPANY 2015 WATER MANAGEMENT PLAN

CHAPTER 1

1.1 INTRODUCTION

The Urban Water Management Planning Act requires all urban water suppliers providing water for municipal purposes to more than 3,000 customers or supplying more than 3,000 acre-feet of water annually to prepare and adopt an Urban Water Management Plan. Urban water suppliers are required to prepare and update their Urban Water Management Plan (UWMP) and submit a complete plan to the Department of Water Resources every five years. The Company's 2015 Urban Water Management Plan is updated by this submittal.

There have been several new additions to the California Water Code establishing new requirements that water suppliers must address in their 2015 UWMP. In January 2009 the Urban Water Management Planning Act was amended by Assembly Bill 1420, requiring the implementation of demand management measures in order to be eligible for water grants or low interest loans. In November 2009 the adoption of Senate Bill X7-7 amended the Act and required water suppliers meet targeted reductions in per capita water use for years 2015 and 2020. This report has been prepared in compliance with the Urban Water Management Planning Act established in 1983 by Assembly Bill 797 and as amended per California Water Code, Division 6, Part 2.6 §10610 – §10656.

CHAPTER 2

PLAN PREPARATION

2.1 Public Participation

Vaughn Water Company encourages public participation in all of its planning efforts by having monthly Board of Director's meetings which are open to the public. All Company policies are set by the Board at these monthly meetings. The Urban Water Management Plan was made available for review in the Company's office prior to the special Director's meeting held June 28, 2016. The shareholders were notified of the UWMP's availability for review by legal notice in the local newspaper. Vaughn Water Company customers and shareholders had access to the plan for review before it was approved and adopted.

Table 2-1 Retail Only: Public Water Systems

Public Water System Number	Public Water System Name	Number of Municipal Connections 2015	Volume of Water Supplied 2015
1510029	Vaughn Water Company Inc.	10318	3,208.55 (MG)
	TOTAL	10,318	3,208.55 (MG)

2.2 Agency Coordination and Outreach

Table 2-2: Plan Identification			
	Type of Plan		Name of RUWMP or Regional Alliance *if applicable*
☑	**Individual UWMP**		
	☐	Water Supplier is also a member of a RUWMP	
	☐	Water Supplier is also a member of a Regional Alliance	
☐	**Regional Urban Water Management Plan (RUWMP)**		

Agency Coordination			
	Was Sent a Notice of Intention to Adopt	Was Sent a Copy of the Draft Plan	Commented on the Draft Plan
Kern County Water Agency	X	X	
City of Bakersfield Department of Water Resources	X	X	
Rosedale Rio-Bravo Water Storage District	X	X	
The County of Kern	X	X	

Vaughn Water Company works with the Kern County Water Agency (KCWA) and with the staff of its Improvement District No. 4 (ID#4) and Rosedale Rio-Bravo Water Storage District (RRBWSD- or Rosedale) on a number of water related issues. The Company solicits data, information, and correspondence from the Agency and Rosedale-Rio-Bravo Water Storage District concerning water management planning. The Agency in turn works with the following agencies:

California Water Services Company

City of Bakersfield Department of Water Resources

East Niles Community Services District

North of the River Municipal Water District

Oildale Mutual Water Company

Kern County Water Agency's Improvement District No. 4 and the Rosedale Rio-Bravo Water Storage District underlie Vaughn Water Company's service area. Both have groundwater management programs that help to preserve the groundwater source by monitoring water quality and water levels.

Table 2-3: Agency Identification	
Type of Agency	
☐	Agency is a wholesaler
☑	Agency is a retailer
Fiscal or Calendar Year	
☑	UWMP Tables Are in Calendar Years
☐	UWMP Tables Are in Fiscal Years
Units of Measure Used in UWMP	
Unit	MG

CHAPTER 3

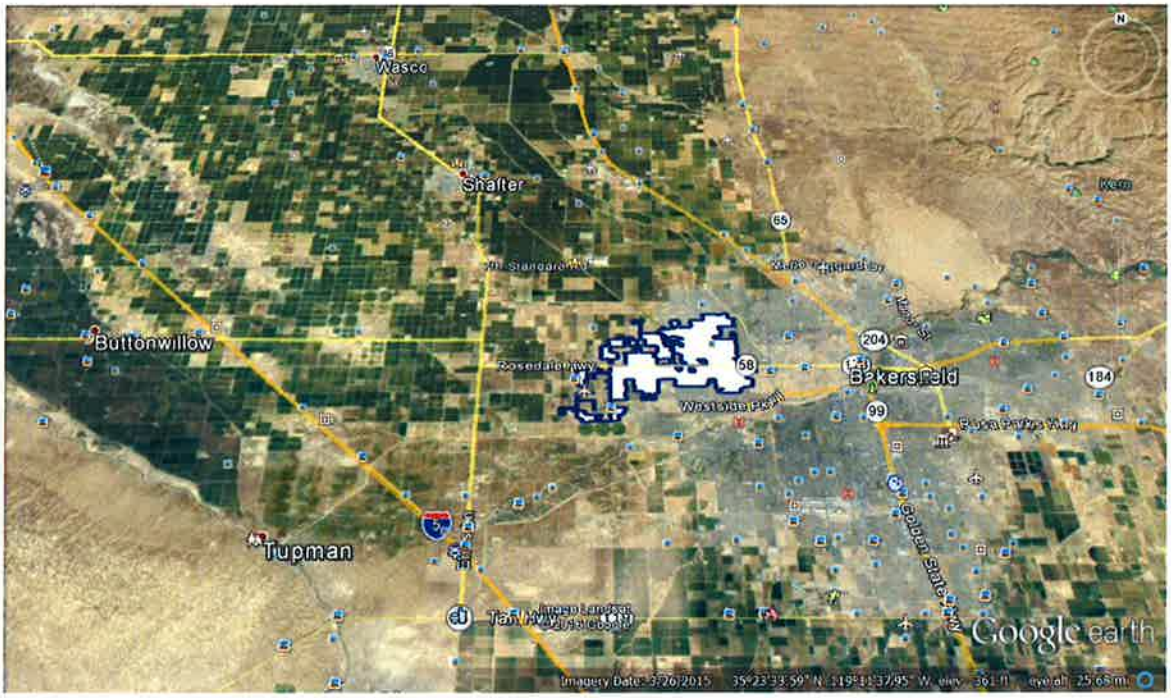
SYSTEM DESCRIPTION

3.1 Supplier Service Area

3.1 Overview of the system and impacts of the housing market.

Vaughn Water Company's 2015 service area population is estimated to be 32,257. These customers are served through 9,956 connections, which are mostly residential (96%) and are located in both the City of Bakersfield and Kern County. The housing market is slowly recovering from the economic downturn experienced during the 2008 through 2012 period. The Company is planning for an average growth rate of 300 connections per year for the 2016 through 2018 period, although the long-term growth rate should remain relatively constant at 3.2%, which translates into an annual increase of about 350 connections per year. There is a great deal of uncertainty in the housing market and therefore it is very difficult to predict the timing of the economic recovery. Water demand predictions contained herein assume the long-term growth rate - as this is thought to be conservative. Vaughn provides for growth by drilling water supply wells and building treatment plants. Future wells will be driven by demand, which is dependent on the housing market. In 2005 Vaughn had commitments to over 5,000 connections through "will serve" letters. A significant number of lots were developed between 2005 and 2008. However the downturn in the housing market left many of these lots in bankruptcy. During 2013, 2014, and 2015 some of these lots have been purchased out of bankruptcy and houses are being built on them. The water infrastructure needed to serve them is gradually being reactivated and service is being extended to them. The majority of these connections are within the Rosedale Rio Bravo Water Storage District ("Rosedale"). Very little development is occurring within ID 4. Vaughn's distribution system is

modeled and updated with new connections periodically. The affects of proposed developments are analyzed to determine the affects of the demands on the groundwater resource - which is communicated to Rosedale in accordance with the letter agreement between Vaughn and Rosedale.



3.2 Climate

Vaughn Water Company is located in Kern County at the southern end of the San Joaquin Valley. The climate is characterized as hot, dry summers and cooler, more humid winters. The temperature ranges from an average low of about 48° F in December, with occasional frosts, to a high often exceeding 100° F in the summer months. Precipitation averages 6.18 inches annually, mostly between the months of November and April. Fog is common in the winter and may last for two to three weeks at a time. See Tabulation 1.

Tabulation1

Monthly Climate Data
CIMIS Data For State of California, San Joaquin Valley Station 5

	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Total
Monthly Average Eto (in) Year 2015	1.04	2.3	4.52	5.88	7.0	7.78	7.8	7.2	5.68	3.71	2.12	1.50	56.53
Average Rainfall (in)	.38	.82	.20	.13	.14	.02	.02	0.0	.02	.96	.26	.59	3.54
Average Temperature (°F)	45.9	56.0	61.0	61.8	66.5	77.6	78.9	77.8	74.1	67.0	48.7	44.1	759.4

Et data from DWR CIMIS records for Station No.5.
Rainfall data from Western Regional Climate Center, Bakersfield 5 NW 354 station.

3.3 Other Demographic Factors - History and Population Growth

Vaughn Water Company was incorporated February 21, 1928 and serves the Rosedale Area of Bakersfield and adjacent areas in Kern County, California. The Company operates under a water supply permit issued by the California State Department of Health Services. The Company has added 959 new connections to its system over the last 5 years with total connections standing at 10,318.

Vaughn Water Company's system currently consists of 9,682 metered and 638 flat rate accounts. The customer base consists of 96.5% residential and 3.5% commercial and industrial. Most of the services are mainly in the County although over the last five years the city areas of the service area have developed at an increasing rate. The Company has various classes of service accounts as follows:

1.) Residential (96.5%)

2.) Commercial / Institutional (2.1%)

3.) Industrial (.3%)

4.) Landscape Irrigation (1.1%)

The Vaughn Water Company service area covers approximately 27 square miles of Kern County of which the Company currently serves property in 15 sections of the County. The area is located north of the Kern River channel and overlies portions of the Kern County Water Agency's Improvement District No. 4 and the Rosedale Rio Bravo Water Storage District. The groundwater pumping levels have lowered over the last ten years due to pumping activity in the area and due to ongoing drought conditions. However, Company wells are deep and pump settings are generally deep enough to accommodate changes in groundwater levels in the area. The Company's experience has been that water quality improves in wet years when water is spread in the Kern River channel and in the several recharge projects that are in the vicinity of the Company service area.

3.4 Service Area Population

The Company's service area grew at an overall annual rate of about 6% from 1990 through 2015. This growth reflects the popularity of the Rosedale community as a bedroom community for the City of Bakersfield. Historically the community has been populated with large lots, centered around an equestrian lifestyle. Recently the area has experienced growth in small residential lots focused on a population that enjoys living in an agrarian setting, but not involved in equestrian activities or agriculture. The Company experienced a high growth rate during the period 1990 -

2005, averaging annually 9.2 %. This rate slowed dramatically to about 1.3% in the period 2005 – 2010 due to the housing market downturn and growth continued at an approximate rate of 2% during 2010 - 2015. The following charts illustrate this growth, and projects the growth to 2035, based on the historical trends established from 1990 - 2015. Tabulation 2 shows the methodology for developing the Service area population.

Tabulation 2
Service Area Population

YEAR	TOTAL # OF ALL RESIDENTIAL CONNECTIONS (SINGLE FAMILY, MULTI FAMILY, METERED, FLAT)	AVERAGE # OF PEOPLE PER HOUSEHOLD (FROM DEPT. OF FINANCE CENSUS DATA)	POPULATION
1990	2,475	3.71	9,182
1991	2,877	3.67	10,558
1992	3,253	3.62	11,776
1993	3,755	3.58	13,443
1994	4,165	3.53	14,702
1995	4,530	3.49	15,810
1996	4,904	3.45	16,919
1997	5,235	3.40	17,799
1998	5,427	3.36	18,235
1999	5,740	3.31	18,999
2000	6,216	3.27	20,326
2001	6,560	3.27	21,451
2002	6,980	3.27	22,825
2003	7,381	3.26	24,062
2004	7,928	3.26	25,845
2005	8,520	3.26	27,775
2006	8,679	3.26	28,293
2007	8,837	3.26	28,809
2008	8,929	3.25	29,019
2009	8,969	3.25	29,149
2010	9,020	3.25	29,315
2011	9,104	3.25	29,588
2012	9,261	3.25	30,098
2013	9,474	3.24	30,696
2014	9,709	3.24	31,457
2015	9,956	3.24	32,257

1. The DWR Online Population Tool was utilized for this UWMP update. Google Earth was utilized to generate a map of our 2010 water service area and uploaded to the DWR Population Tool Portal. The resulting service area population estimate provided by this particular service was 29,315.

This population trend was projected into the future (see Tabulation 3), assuming that the current state of the economy will rebound to reflect long-term trends for Vaughn Water Company and the Rosedale community, approximately 3.2% annually.

Tabulation 3

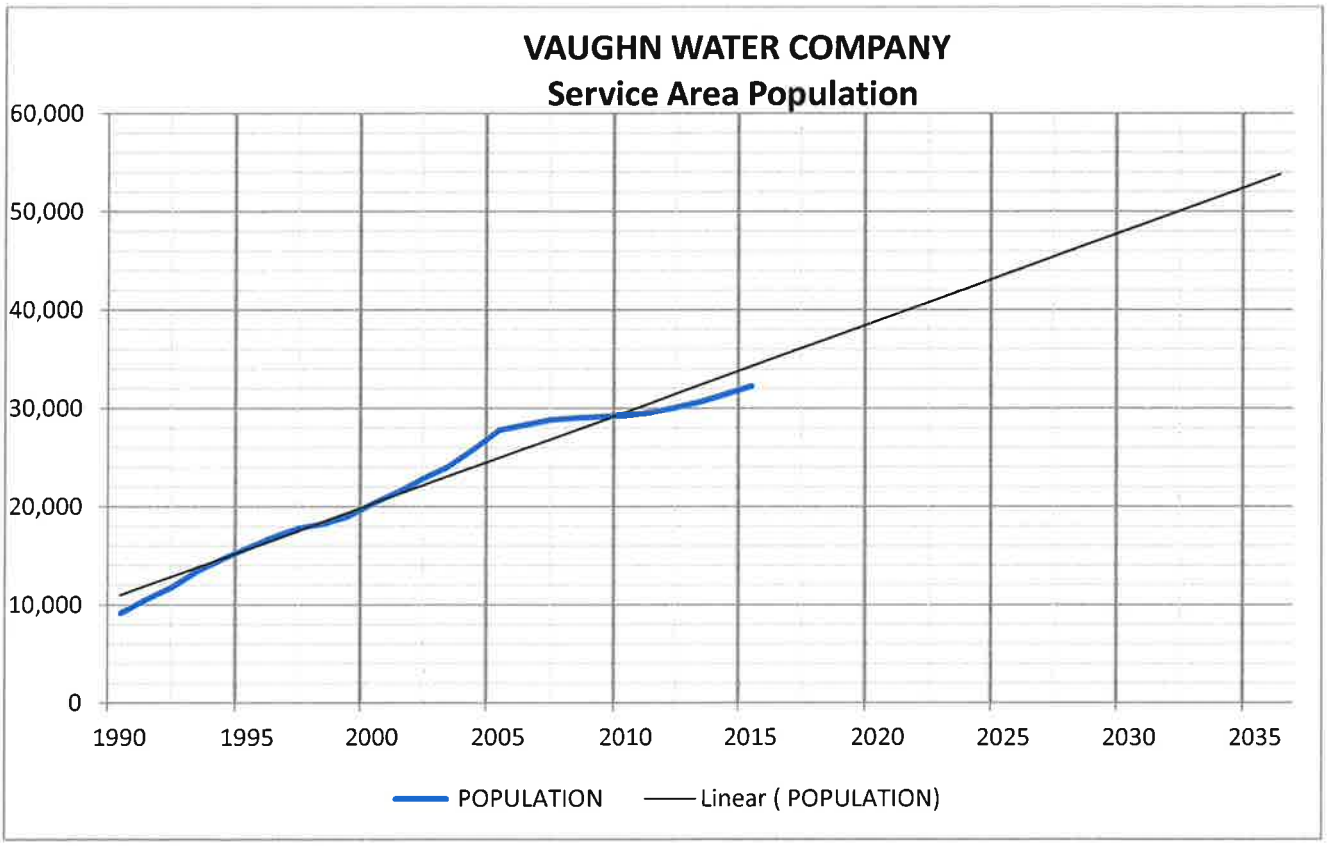


Table 3-1 Retail: Population - Current and Projected						
Population Served	2015	2020	2025	2030	2035	2040*(opt)*
	32,257	38,400	43,100	47,750	52,400	
NOTES: Projected population is based on a 3.2% annual growth rate.						

CHAPTER 4

SYSTEM WATER USE

4.1 Groundwater and Underlying Districts

Vaughn Water Company relies totally on groundwater for its water supply. Underlying districts have groundwater replenishment programs that store water in the underlying groundwater basin. These districts are Rosedale - Rio Bravo Water Storage District and Improvement District No.4 of the Kern County Water Agency. Programs operated by these two districts have improved the reliability of the groundwater supply for the overlying residential water suppliers. The banking programs by these districts have resulted in much improved groundwater conditions over what would have prevailed had these districts not operated their programs. Vaughn Water Company participates in financing these programs through property taxes paid by company shareholders and by fees levied against each acre-foot of water pumped by the company within ID 4. System water supplies are addressed in Section 4.

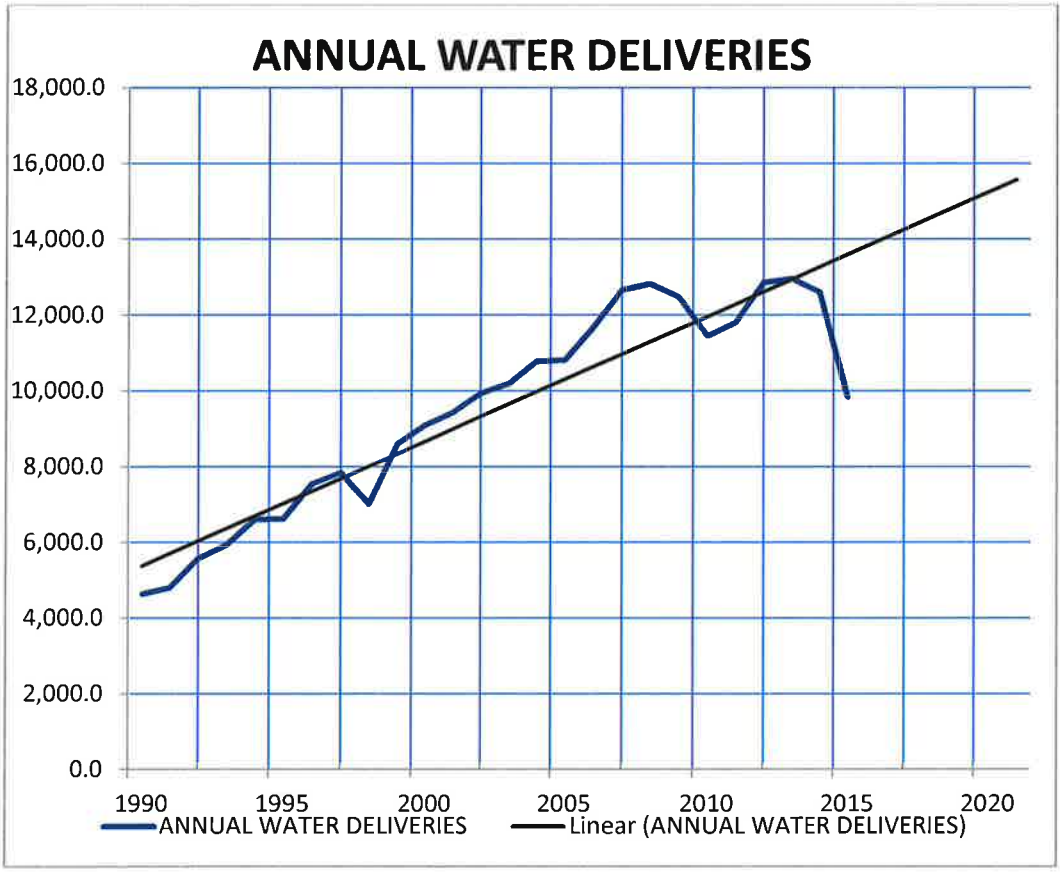
4.2 Water Demands

Company demands have increased over the years as the number of connections has increased. Drought conditions and recent water use restrictions resulted in lower overall water deliveries during 2014 and 2015. These demands are shown in the following Tabulation 4.

Tabulation 4
Annual Water Demands

YEAR	ANNUAL TOTAL WATER PRODUCED (GALLONS)	ANNUAL TOTAL WATER LOSSES (GALLONS) 3.00%	ANNUAL TOTAL WATER DELIVERED (GALLONS)	ANNUAL TOTAL WATER DELIVERED (ACRE-FEET)
1990	1,509,611,749	45,288,352	1,464,323,397	4,494
1991	1,565,580,915	46,967,427	1,518,613,488	4,660
1992	1,816,703,433	54,501,103	1,762,202,330	5,408
1993	1,933,936,281	58,018,088	1,875,918,193	5,757
1994	2,152,708,073	64,581,242	2,088,126,831	6,408
1995	2,156,498,438	64,694,953	2,091,803,485	6,420
1996	2,458,298,640	73,748,959	2,384,549,681	7,318
1997	2,556,036,676	76,681,100	2,479,355,576	7,609
1998	2,287,784,358	68,633,531	2,219,150,827	6,810
1999	2,802,388,000	84,071,640	2,718,316,360	8,342
2000	2,963,773,340	88,913,200	2,874,860,140	8,823
2001	3,073,900,140	92,217,004	2,981,683,136	9,150
2002	3,235,287,915	97,058,637	3,138,229,278	9,631
2003	3,321,885,027	99,656,551	3,222,228,476	9,889
2004	3,511,348,128	105,340,444	3,406,007,684	10,453
2005	3,522,978,656	105,689,360	3,417,289,296	10,487
2006	3,802,178,478	114,065,354	3,688,113,124	11,318
2007	4,127,111,476	123,813,344	4,003,298,132	12,286
2008	4,179,163,591	125,374,908	4,053,788,683	12,441
2009	4,066,831,840	122,004,955	3,944,826,885	12,106
2010	3,730,114,798	111,903,444	3,618,211,354	11,104
2011	3,846,497,834	115,394,935	3,731,102,899	11,450
2012	4,188,643,434	125,659,303	4,062,984,131	12,469
2013	4,222,720,215	126,681,606	4,096,038,609	12,570
2014	4,106,001,910	123,180,057	3,982,821,853	12,223
2015	3,208,559,855	96,256,796	3,112,303,059	9,551

Tabulation 5



The reduction in deliveries in 2010 is due to several factors, among them being the downturn in the economy, the wet rainfall year, and the reduction in service pressure in the northeast portion of the service area due to ongoing maintenance of a major supply well in that area. The reduction in deliveries during the 2014 and 2015 years reflects water conservation efforts made by shareholders in response to State Drought Regulations.

Table 4-1 Retail: Demands for Potable and Raw Water - Actual

Use Type *(Add additional rows as needed)*	2015 Actual		
	Additional Description *(as needed)*	Level of Treatment When Delivered	Volume
Single Family		Drinking Water	3,082.62
Multi-Family		Drinking Water	13.37
Commercial		Drinking Water	67.80
Industrial		Drinking Water	8.70
Landscape		Drinking Water	34.82
Other			1.24
		TOTAL	3,208.55 (MG)

NOTES: Volume = Use Type Connections/Total Overall Connections*Total Production

Table 4-2 Retail: Demands for Potable and Raw Water - Projected

Use Type *(Add additional rows as needed)*	Additional Description *(as needed)*	Projected Water Use *Report To the Extent that Records are Available*				
		2020	2025	2030	2035	2040-opt
Single Family		3,806.3	4,455.5	5,215.5	6,105.2	
Multi-Family		15.7	18.3	21.4	25.1	
Commercial		88.4	103.5	121.2	141.8	
Industrial		11.4	13.4	15.6	18.3	
Landscape		45.7	53.5	62.6	73.3	
Other		263.6	308.6	361.3	422.9	
	TOTAL	4,231.1	4,952.8	5,797.6	6,786.6	0

NOTES: All figures are in (MG) million gallons.

Table 4-3 Retail: Total Water Demands

	2015	2020	2025	2030	2035	2040 *(opt)*
Potable and Raw Water *From Tables 4-1 and 4-2*	3,208.56 (MG)	4,231.1 (MG)	4,952.8 (MG)	5,797.6 (MG)	6,786.6 (MG)	0
Recycled Water Demand* *From Table 6-4*	0	0	0	0	0	0
TOTAL WATER DEMAND	3,208.56 (MG)	4,231.1 (MG)	4,952.8 (MG)	5,797.6 (MG)	6,786.6 (MG)	0

**Recycled water demand fields will be blank until Table 6-4 is complete.*

NOTES: All figures are in (MG) million gallons.

Table 4-4 Retail: 12 Month Water Loss Audit Reporting	
Reporting Period Start Date (mm/yyyy)	Volume of Water Loss*
01/2015	96.26 (MG)
** Taken from the field "Water Losses" (a combination of apparent losses and real losses) from the AWWA worksheet.*	
NOTES: All figures are in (MG) million gallons.	

Table 4-5 Retail Only: Inclusion in Water Use Projections	
Are Future Water Savings Included in Projections? (Refer to Appendix K of UWMP Guidebook)	No
If "Yes" to above, state the section or page number, in the cell to the right, where citations of the codes, ordinances, etc... utilized in demand projections are found.	
Are Lower Income Residential Demands Included In Projections?	Yes
NOTES:	

CHAPTER 5

5.1 Baselines and Targets

Tabulation 6 and 7 develop the Five Year and Ten Year Average Per Capita Water Use Target utilizing 80% of the baseline gpcd water use.

Tabulation 6
Five and Ten Year Average GPCD

YEAR	POPULATION	ANNUAL TOTAL WATER DELIVERED (GALLONS)	GALLONS PER CAPITA WATER USE	TEN YEAR AVERAGE (gpcd)	FIVE YEAR AVERAGE (gpcd)
1990	9,182	1,509,611,749	450.44		
1991	10,558	1,565,580,915	406.26		
1992	11,776	1,816,703,433	422.66		
1993	13,443	1,933,936,281	394.14		
1994	14,702	2,152,708,073	401.16		
1995	15,810	2,156,498,438	373.70		
1996	16,919	2,458,298,640	398.08		
1997	17,799	2,556,036,676	393.44		
1998	18,235	2,287,784,358	343.73		
1999	18,999	2,802,388,000	404.11		
2000	20,326	2,963,773,340	399.48		
2001	21,451	3,073,900,140	392.60		
2002	22,825	3,235,287,915	388.34		
2003	24,062	3,321,885,027	378.23		
2004	25,845	3,511,348,128	372.22	384.39	
2005	27,775	3,522,978,656	347.51	381.77	
2006	28,293	3,802,178,478	**368.18**	378.78	
2007	28,809	4,127,111,476	**392.49**	378.69	371.73
2008	29,019	4,179,163,591	**394.56**	383.77	374.99
2009	29,149	4,066,831,840	**382.24**	381.59	377.00
2010	29,315	3,730,114,798	**348.61**	376.50	**377.22**
2011	29,588	3,846,497,834	356.17	372.86	
2012	30,098	4,188,643,334	381.28	372.15	
2013	30,695	4,222,720,215	376.90	372.02	
2014	31,457	4,106,001,910	357.61	370.56	
2015	32,257	3,208,559,855	272.52	363.06	

Table 5-1 Baselines and Targets Summary
Retail Agency or Regional Alliance Only

Baseline Period	Start Year	End Year	Average Baseline GPCD*	2015 Interim Target *	Confirmed 2020 Target*
10-15 year	*1995*	*2004*	*382*	*345*	*307*
5 Year	*2006*	*2010*	*377*		

*All values are in Gallons per Capita per Day (GPCD)

NOTES:

Table 5-2: 2015 Compliance
Retail Agency or Regional Alliance Only

Actual 2015 GPCD*	2015 Interim Target GPCD*	Optional Adjustments to 2015 GPCD Enter '0' if no adjustment is made *From Methodology 8*					2015 GPCD* *(Adjusted if applicable)*	Did Supplier Achieve Targeted Reduction for 2015? Y/N
		Extraordinary Events*	Economic Adjustment*	Weather Normalization*	TOTAL Adjustments*	Adjusted 2015 GPCD*		
273	346				0	273	273	Yes

All values are in Gallons per Capita per Day (GPCD)

NOTES:

5.2 Forecast Based on Target GPCD

Tabulation 7
Annual Forecast Water Deliveries

Forecast Year	Service Area Population*	Average GPCD - Adjusted for 2015 and 2020 Target GPCD	Total Annual Forecast Demand (gallons / year)	Total Annual Forecast Demand (acre-feet)	Total Actual Deliveries (acre-feet)
2010	29,315	348.61	3,730,114,798		11,447
2011	29,588	356.17	3,846,497,834		11,804
2012	30,098	381.28	4,188,643,334		12,854
2013	30,695	376.90	4,222,720,215		12,959
2014	31,457	357.61	4,106,001,910		12,601
2015	32,257	272.52	3,208,559,855		9,847
2016	33,289	338	4,106,891,565	12,604	
2017	34,354	330	4,137,997,016	12,699	
2018	35,454	322	4,166,887,759	12,788	
2019	36,588	314	4,193,390,200	12,869	
2020	37,759	307	4,231,104,002	12,985	
2021	38,967	307	4,366,499,330	13,400	
2022	40,214	307	4,506,227,309	13,829	
2023	41,501	307	4,650,426,583	14,272	
2024	42,829	307	4,799,240,233	14,728	
2025	44,200	307	4,952,815,921	15,200	
2026	45,614	307	5,111,306,030	15,686	
2027	47,074	307	5,274,867,823	16,188	
2028	48,580	307	5,443,663,594	16,706	
2029	50,135	307	5,617,860,829	17,241	
2030	51,739	307	5,797,632,375	17,792	

**** The population growth rate is discussed in prior sections of this plan.***

**** Year 2010 through 2015 reflect actual water deliveries and actual GPCD.**

5.3 Water Demands – Water Demand Projections

Normal Year Supply and Demand Comparison					
	2020	2025	2030	2035	2040 *(Opt)*
Supply totals *(autofill from Table 6-9)*	7,627.0	7,856.0	8,092.0	8,335.0	0
Demand totals *(autofill from Table 4-3)*	4,231.0	4,953.0	5,797.0	6,787.0	0
Difference	3,396.0	2,903.0	2,295.0	1,548.0	0
NOTES: All figures are in (MG) million gallons.					

5.4 Projected Low Income Water Demands

The Rosedale community is a relatively affluent area with 43% of the population employed in professional, management and related occupations, 16% in service occupations, and 25% in sales and office occupations. Only 5.5% of the population was unemployed in 2009. The percentage of families with incomes below the poverty level was 4% in 2009. *(Source: U.S. Census Bureau - Rosedale CDP: 2005-2009).* The Census Bureau information cited above indicates that about 6% of the families and 8% of the households in Rosedale have an income below $25,000. Using 8% as an estimate of the total water use for Low-Income water demand, the following Tabulation 8 represents low-Income water demands for the 2025 through 2035 period.

Tabulation 8
Low-income projected water demands

Low Income Water Demands[1]	2020	2025	2030	2035
Single-family residential	996	1,166	1,364	1,597
Multi-family residential	4	5	6	7
Total	1,000	1,171	1,370	1,604
Units : acre-feet per year				
Estimated as 8% of total demand.				

CHAPTER 6

SYSTEM SUPPLIES

6.1 Water Supply Sources: Groundwater

6.1.1 Water Supply Sources Groundwater / Surface Water

The water supply for the Vaughn Water Company service area comes from groundwater (no surface water is used). The Company currently has no institutional restrictions on the amount of groundwater it can extract. The Company is a water retailer which overlies portions of the Kern County Water Agency ("KCWA") Improvement District No. 4 ("ID4") and the Rosedale-Rio Bravo Water Storage District ("RRBWSD"). Landowners, including Vaughn Water Company pay water tolls to support the activities of both Districts. In addition Vaughn Water Company pays a "pump tax" for all groundwater extracted within ID4.

The Company's system is as follows:

1.) 12 Active Water Wells

2.) 3.90 Million Gallons of above ground storage

3.) 11 Booster Pumping Plants

4.) 8 Water Treatment Plants

5.) 4 Water Interties with other systems.

The system has a peak capacity of 27,900 GPM and a continuous capacity of 17,400 GPM with a maximum monthly output of over 760,000,000 (2340 acre-feet). The Company's total water production during 2015 was 11,804 Acre-Feet.

The Company's water production from 2011 to 2015 and projections through 2035 are presented in the following tables.

Table 6-1 Retail: Groundwater Volume Pumped

☐	Supplier does not pump groundwater. The supplier will not complete the table below.					
Groundwater Type	**Location or Basin Name**	**2011**	**2012**	**2013**	**2014**	**2015**
Add additional rows as needed						
Alluvial Basin		3,846.49	4,188.64	4,222.72	4,106.0	3,208.55
	TOTAL	3,846.49	4,188.64	4,222.72	4,106.0	3,208.55

Totals are in (MG) million gallons.

Table 6-8 Retail: Water Supplies — Actual

Water Supply	Additional Detail on Water Supply	2015		
		Actual Volume	Water Quality	Total Right or Safe Yield *(optional)*
Add additional rows as needed				
Groundwater		3,208.55	Drinking Water	
	Total	3,208.55		0

NOTES: Totals are in (MG) million gallons.

Table 6-9 Retail: Water Supplies — Projected

Water Supply	Additional Detail on Water Supply	Projected Water Supply *Report To the Extent Practicable*									
Drop down list May use each category multiple times. These are the only water supply categories that will be recognized by the WUEdata online submittal tool		2020		2025		2030		2035		2040 *(opt)*	
		Reasonably Available Volume	Total Right or Safe Yield *(optional)*	Reasonably Available Volume	Total Right or Safe Yield *(optional)*	Reasonably Available Volume	Total Right or Safe Yield *(optional)*	Reasonably Available Volume	Total Right or Safe Yield *(optional)*	Reasonably Available Volume	Total Right or Safe Yield *(optional)*
Add additional rows as needed											
Groundwater		11,000.0		11,000.0		11,000.0		11,000.0			
Total		11,000.0	0	11,000.0	0	11,000.0	0	11,000.0	0	0	0

NOTES: Totals are in (MG) million gallons.

The Company's expansion policy is to grow as the community grows. New well sites are acquired as growth requires. When the projected water need occurs, new wells with treatment

plants are drilled, constructed, and brought on line in a timely manner to meet the higher demand. A new well and plant will serve about 1,000 connections.

The following Tabulation 18 depicts the calculation of the net groundwater demand for the Company service area for the years 2015 – 2035. Assumptions regarding interior and exterior water use and amounts returned to the groundwater basin are footnoted on the table.

Tabulation 9

Net Groundwater Demand Calculation

Year	Total Demand (af)	Interior Water Use (af)	Exterior Water Use (af)	Return Flow from Interior (af)	Return Flow from Exterior (af)	Total Return Flow (af)	Net Demand (af)
2015	9,552	2,388	7,164	2,269	1,791	4,060	5,492
2020	12,595	3,149	9,446	2,992	2,361	5,353	7,242
2025	14,744	3,686	11,058	3,502	2,764	6,266	8,478
2030	17,258	4,315	12,943	4,099	3,236	7,355	9,923
2035	20,202	5,050	15,151	4,797	3,788	8,585	11,617

Notes:

1. 25% of total water use is assumed for interior of house.
2. 75% of total water use is assumed for exterior uses.
3. 95% of interior use is assumed to return to groundwater
4. 25% of exterior use is assumed to return to groundwater
5. 10% of total precip. applied over the current and projected service area

The net groundwater demand is about 58% of the total groundwater pumped.

6.2 Underlying Water Agencies – Sufficiency of Groundwater Supply

Vaughn Water Company overlies two local water agencies: Kern County Water Agency's Improvement District No.4 ("ID 4") and Rosedale-Rio Bravo Water Storage District ("RRBWSD") Most of the

lands that Vaughn serves within ID 4 are currently developed to residential or commercial uses. The majority of the future development within the Company's service area will occur on lands within RRBWSD.

The Company has entered into a Memorandum of Understanding (See Appendix A) with RRBWSD in a cooperative effort to allow development of certain lands within the District. These lands are being converted from agricultural use to residential use. Lands within RRBWSD pay water tolls based on the benefit the lands receive from the Districts groundwater recharge programs. Lands that are converted to urban use continue to pay these groundwater benefit charges. RRBWSD has endeavored to create a groundwater balance within the District through importation of water for recharge and in-lieu water supply programs, and through cooperative programs with other water agencies. Studies by the District indicate that a groundwater balance is being achieved. The conversion of agricultural lands to residential and commercial use decreases the groundwater demand by about 50%, thus reducing the pressure on the groundwater basin.

Appendix A contains "Appendix 2", a hypothetical future operations study for the Rosedale-Rio Bravo Water Storage District. This study covers a future 37-year period and includes programs currently proposed by the District. The cumulative water balance in this thirty-seven year study shows a net groundwater storage increase of 206,467 acre-feet over the period for the District. The study indicates that groundwater supplies will be sufficient for the next several decades.

Improvement District No.4 was formed for the purpose of financing the Henry C. Garnett Water Purification Plant, related water conveyance facilities, and a portion of the cost of the Cross Valley Canal. Upon reaching ID 4, the supplemental water supply from the State Water Project ("SWP") was to be delivered directly to recharge areas for direct replenishment of the aquifer or to the Henry C. Garnett Water Purification Plant for use by water purveyors. ID 4 encompasses approximately 65,400 acres. The ID 4

water supply project is based on the concept of a treated water supply to permanently replace a portion of groundwater pumping and SWP water recharged into the underground aquifers to supply ongoing groundwater pumping. The Zone 7 assessments, applied to all the lands within ID 4, pay for the annual SWP water supply of 82,946 acre-feet. This amounts to 1.27 acre-feet per acre of land within ID 4. ID 4 pursues a number of other supplies in addition to its SWP supply. This includes interruptible water from the SWP, high flow Kern River and Central Valley Project ("CVP") water, exchanges with Kern River interests, and other SWP Contractors.

Groundwater pumping charges (currently $37 per acre-foot of M&I water) help pay for the operation of the ID 4 project (including ID 4's share of the operation and maintenance of the Cross Valley Canal – which conveys the water from the California Aqueduct near Tupman to ID 4). Vaughn Water Company pays these tolls on the water pumped from Company wells located within ID 4. Land owners within ID 4 pay the annual Zone 7 assessments. These are collected on the property tax bill.

Vaughn Water Company supports the efforts of both agencies to achieve a groundwater balance in the Company's service area, and recognizes that Company–served landowners within both agencies have contributed significant amounts of money to aid in the achievements made thus far and will continue to contribute to these efforts.

Appendix B contains Figure 1, a hydrograph representing water levels in the Krause Well, located in Rosedale-Rio Bravo Water Storage District (Well 29/26-15H1).This hydrograph covers the period 1980 – 2005. Note that during the most recent dry period (1987 – 1992) water levels decreased about 100 feet. This did not significantly impact Vaughn Water Company wells as the wells are deep and pump settings are also deep. Figure 2, is a hydrograph representing water levels in the Company's Jewetta Well, located on

the west boundary of ID 4 (Well 29/27-30D50). This well was drilled in the 1970's and was placed on standby in the late 1980's. This hydrograph covers the period 1989 - 2005.

6.3 Recycled Water

Vaughn Water Company does not have the responsibility of handling the sewer or storm drain system in the Rosedale service area. The city sections of the area are on sewers and the County sections of the area are mainly on septic systems. The storm drain systems run into County and / or City sumps. The Company handles only potable water from wells and does not recycle water.

6.4 Transfer and Exchange Opportunities

Vaughn Water Company does not have any surface water supply contracts and has no access to transfer or exchanges. The Company's service area overlies Rosedale-Rio Bravo Water Storage District (RRBWSD) and the Kern County Water Agency's Improvement District No. 4 (ID4). Vaughn Water Company is essentially a water retailer and relies on RRBWSD and ID-4 as water wholesalers to bring in the water supply to the service area. Vaughn Water Company has in the past, and will continue in the future, to assess the possibilities of a surface water supply for lands within ID4.

6.5 Planned Water Supply Projects and Programs

Vaughn Water Company's water supply comes totally from groundwater. The groundwater basin is managed by two underlying districts, Rosedale Rio-Bravo Water Storage District and Kern County Water Agency's Improvement District No. 4. Both entities import surface water to mitigate the effects of groundwater pumping.

A future link to the Henry Garnett Water Purification Plant operated by ID No.4 may be constructed within the next decade, depending on the housing market, availability of supply, and financing opportunities.

Vaughn Water Company continues to grow, currently at a reduced pace compared to recent years, and has plans to add new wells, treatment plants, and water storage to meet the continuing growth.

6.6 Development of Desalinated Water

Vaughn Water Company has no plans to develop brackish groundwater.

6.7 Wholesale Water

The Company does not receive wholesale surface water and is not a wholesale water purveyor.

CHAPTER 7

WATER SUPPLY RELIABILITY
AND
WATER SHORTAGE CONTINGENCY PLANNING

7.1 Water Supply Reliability

7.1 Reliability

Reliability is a measure of a water service system's expected success in managing water shortages. In addition to climate other factors that can cause water supply shortages are earthquakes, chemical spills, and energy outages at pumping and treatment facilities.

Reliability planning requires information about: (1) the expected frequency and severity of shortages; (2) how additional water management measures are likely to affect the frequency and severity of shortages; (3) how available contingency measures can reduce the impact of shortages when they occur.

Since Vaughn Water Company relies on groundwater supplies to meet 100% of its demand short-term shortages would likely be due to earthquake and / or electricity outages. Long term shortages would result in lowering groundwater pumping levels thus increasing the cost of pumping.

Table 7-1 Retail: Basis of Water Year Data			
Year Type	Base Year *If not using a calendar year, type in the last year of the fiscal, water year, or range of years, for example, water year 1999-2000, use 2000*	Available Supplies if Year Type Repeats	
		☐ Quantification of available supplies is not compatible with this table and is provided elsewhere in the UWMP. Location _____	
		☑ Quantification of available supplies is provided in this table as either volume only, percent only, or both.	
		Volume Available	% of Average Supply
Average Year	2013	7405.0	100%
Single-Dry Year	2014	7405.0	100%
Multiple-Dry Years 1st Year		6942.0	90%
Multiple-Dry Years 2nd Year		6942.0	90%
Multiple-Dry Years 3rd Year		6479.0	80%
Multiple-Dry Years 4th Year *Optional*			
Multiple-Dry Years 5th Year *Optional*			
Multiple-Dry Years 6th Year *Optional*			
Agency may use multiple versions of Table 7-1 if different water sources have different base years and the supplier chooses to report the base years for each water source separately. If an agency uses multiple versions of Table 7-1, in the "Note" section of each table, state that multiple versions of Table 7-1 are being used and identify the particular water source that is being reported in each table.			
NOTES: All figures are in (MG) million gallons.			

Table 7-2 Retail: Normal Year Supply and Demand Comparison					
	2020	2025	2030	2035	2040 *(Opt)*
Supply totals *(autofill from Table 6-9)*	7,627.0	7,856.0	8,092.0	8,335.0	0
Demand totals *(autofill from Table 4-3)*	4,231.0	4,953.0	5,797.0	6,787.0	0
Difference	3,396.0	2,903.0	2,295.0	1,548.0	0
NOTES: All figures are in (MG) million gallons.					

7.2 Plans to Assure a Reliable Water Supply – Delivering Capability

The Company operates twelve wells and three storage facilities. Four of the wells have passive treatment systems (activated carbon) and four have active treatment systems (ozone).

In the event of electrical supply shortage the Company has three portable generators that can be deployed to designated locations in the service area. In the unlikely event of a 100% electrical outage, three of the production sites could be operated, providing about 25% of the system's peak summer requirements and 100% of the peak winter requirement. In the more-likely event of partial electrical outage the Company will use a combination of generators and available electricity to meet water demands. These steps, combines with public notification, will allow the Company to meet reduced water demands during catastrophes.

In the event of drought the Company will experience increased pumping lift in its wells. The attached hydrographs (APPENDIX B) depict typical variations in groundwater depths in the Rosedale area due to periods of reduced surface water supplies. These supplies are used to replenish the groundwater table. Pumping lift increases of from 70 to 100 feet would not be uncommon during an extended three-year drought. The Company's pumps are set deep enough to allow for these variations.

Table 7-3 Retail: Single Dry Year Supply and Demand Comparison					
	2020	2025	2030	2035	2040 (Opt)
Supply totals	7405.0	7405.2	7405.0	7405.0	
Demand totals	4231.1	4952.8	5797.6	6786.6	
Difference	3173.9	2452.4	1607.4	618.4	0
NOTES: All figures are in (MG) million gallons.					

Table 7-4 Retail: Multiple Dry Years Supply and Demand Comparison						
		2020	2025	2030	2035	2040 (Opt)
First year	Supply totals	7,627.0	7,856.0	8,092.0	8,335.0	
	Demand totals	4,231.0	4,952.0	5,798.0	6,787.0	
	Difference	3,396.0	2,904.0	2,294.0	1,548.0	0
Second year	Supply totals	6,864.0	7,070.0	7,283.0	7,502.0	
	Demand totals	4,231.0	4,952.0	5,798.0	6,787.0	
	Difference	2,633.0	2,118.0	1,485.0	715.0	0
Third year	Supply totals	6,864.0	7,070.0	7,283.0	7,502.0	
	Demand totals	4,231.0	4,952.0	5,798.0	6,787.0	
	Difference	2,633.0	2,118.0	1,485.0	715.0	0
Fourth year *(optional)*	Supply totals					
	Demand totals					
	Difference	0	0	0	0	0
Fifth year *(optional)*	Supply totals					
	Demand totals					
	Difference	0	0	0	0	0
Sixth year *(optional)*	Supply totals					
	Demand totals					
	Difference	0	0	0	0	0
NOTES: Supply Totals First Year = 80% of Safe Yield. Supply Totals Second Year = 70% of Safe Yield. Supply Totals Third Year = 70% of Safe Yield.						

7.3 Factors Resulting in Inconsistency of Supply

Vaughn Water Company uses 100% groundwater for its supply. The main environmental agents affecting Vaughn Water's supply are multiple year drought and water quality.

Vaughn Water Company operates under the jurisdiction of the State of California Department of Public Health (DPH). DPH sets water quality standards and requires us to perform a listed set of water quality tests. All of Vaughn's water meets all water quality standards, but there are some water quality issues that the Company must handle. Currently the Company has installed treatment for DBCP and EDB and taste and odor. Chlorination is installed at all Company source locations.

CHAPTER 8

Water Shortage Contingency Planning

8.1 Coordinated Planning

The Vaughn Water Company ("Vaughn") supplies municipal, commercial, and industrial water to the Rosedale Area of West Bakersfield, which lands are included in either the County of Kern or the City of Bakersfield. These lands are also within one of two public water agencies: the Rosedale-Rio Bravo Water Storage or Improvement District Number Four ("ID4") of the Kern County Water Agency. Vaughn's customer base is primarily residential with commercial, industrial, and other uses in the minority. Historically, the typical Rosedale Area residential lot has been ½ to 2-1/2 acres (22,000 to 109,000 square feet) with either a great deal of landscaping, pastures for large animals, or small orchards. In the past few years the trend has been towards smaller lots of 6,000 to 11,000 square feet and therefore unit water use has decreased.

Vaughn is dependent solely on groundwater sources for its water supply. The Company has no institutional restrictions on the amount of groundwater it can extract. Individual land owners pay water tolls to either ID4 or Rosedale-Rio Bravo because of groundwater benefits due to surface water importation programs operated by each agency. Additionally pumpers pay a "pump tax" to ID4 based on the quantity of groundwater pumped. Both ID4 and Rosedale-Rio Bravo monitor groundwater levels in the Rosedale Area. The Company also monitors this information. The impact of continuing drought is lowering of groundwater levels. This is because of reduced surface water imports which restrict groundwater recharge programs and increase groundwater extractions as temporary replacements for surface water deliveries. Vaughn is represented on the Urban Bakersfield Advisory Committee and participates in certain of its programs.

8.2 Stages of Action

For purpose of this Contingency Plan the flowing levels of supply reductions were assumed: Stage 1) 15% reduction, Stage 2) 30% reduction, Stage 3) 50% reduction. Accordingly the following Table presents the normal demands together with 15%, 30%, and 50% reductions in these demands for 2006 through 2015.

The Board of Directors of the Company will set the action stage upon review of changes in groundwater levels and projected shortage in surface water deliveries for the Bakersfield urban area. The Company intends to act in concert with other urban water suppliers in the Bakersfield area.

The plan for each successive reduction stage is as follows:

Table 8-1 Retail Stages of Water Shortage Contingency Plan		
Stage	Complete Both	
	Percent Supply Reduction[1] *Numerical value as a percent*	Water Supply Condition *(Narrative description)*
Add additional rows as needed		
1	15%	Drought or loss of water supply greater than 10% of total supply.
2	30%	Loss of supply greater than 15% of total supply.
3	50%	Loss of supply greater than 30% of total supply.
[1] *One stage in the Water Shortage Contingency Plan must address a water shortage of 50%.*		
NOTES:		

8.3 Mandatory Prohibitions on the Wasteful Use of Water and Enforcement Methods

Vaughn Water Company, Inc., operates under Bylaws that were last amended by the Board of Directors on January 7, 1997. Article VII, Section 2.g states "Any shareholder who wastes water shall, at the discretion of the Board of Directors, have service terminated until such time that the shareholders can make reasonable assurances to the Company that the delivered water shall not be wasted." Additionally, the company adopted an emergency water conservation regulation in response to the Governor's executive order signed April 25, 2014. A copy of our resolution #15-02 is included in the appendix section of this UWMP.

8.4 Enforcement Methods

Enforcement methods will depend on the Stage of Action. Enforcement will range from voluntary reduction programs with no penalties to reduction of system pressures to reduce flow quantities. The following table presents anticipated enforcement methods by reduction required.

Table 8-2 Retail Only: Restrictions and Prohibitions on End Uses

Stage	Restrictions and Prohibitions on End Users	Additional Explanation or Reference *(optional)*	Penalty, Charge, or Other Enforcement?
Add additional rows as needed			
2	Landscape - Limit landscape irrigation to specific		Yes
1	Other - Customers must repair leaks, breaks, and malfunctions in a timely manner		Yes
2	CII - Restaurants may only serve water upon request		Yes
2	Other - Prohibit use of potable water for washing hard surfaces		Yes
3	Landscape - Other landscape restriction or prohibition	Minimum 50% reduction on all landscaping watering.	Yes

NOTES:

Table 8-3 Retail Only: Stages of Water Shortage Contingency Plan - Consumption Reduction Methods		
Stage	Consumption Reduction Methods by Water Supplier	Additional Explanation or Reference *(optional)*
Add additional rows as needed		
2	Offer Water Use Surveys	As requested by homeowners.
1	Provide Rebates on Plumbing Fixtures and Devices	Through mfg rebate, state rebate, & saveourwater.org.
1	Provide Rebates for Turf Replacement	Through mfg rebate, state rebate, & saveourwater.org.
2	Decrease Line Flushing	Only flush lines due to taste and odor complaints.
2	Increase Water Waste Patrols	Water patrol is operated on a varying schedule at a frequency of 3-6 days per week with shifts ranging from 2-4 hours.
3	Other	Reduce landscape watering a minimum of 50%. Enforce water use restrictions.
NOTES:		

ENFORCEMENT METHODS FOR OBTAINING WATER USE REDUCTIONS

STAGE	REDUCTION GOAL	ENFORCEMENT METHOD
1	15%	Voluntary program. Community education program via flyers sent with or in additional to billings. Water conservation tips made available to users.
2	15% - 30%	Mandatory program. Includes Stages 1 Methods. Surcharges on use above 75% of the "normal" use for metered users. Close monitoring of flat rate users with penalties for wasting water, including installation of meters for those who refuse to conserve. Water conservation devices made available for purchase at cost through Company. Community education program via public information programs with public meetings held at Company office to discuss water conservation measures and status of the program. Water audits and landscape recommendations made available to water users with large landscaped lots or pastures.
3	30% - 50%	Mandatory program. Includes Stages 1 and 2 Methods. Large lot water users required to cut landscaping and/or pasture use by 50%. Water audits required for large lots with large amounts of landscaping, system pressure reductions or flow restrictions required if water use does not meet required 50% reduction.

8.5 Catastrophic Supply Implementation Plan

The following is a listing of possible catastrophes and the actions the Company plans to take for each one:

Regional Power Outage

The Company will employ portable generators already installed, to operate the most critical wells/booster plants in the system. The Company will notify residents to minimize water usage during the time of the outage. This will be by local radio and door to door notification. The Company has four generators which will run two wells, the 2.7 million gallon storage tank and the main office.

Earthquake

Wells that remain serviceable will be utilized. Portable generators will be used if necessary. There are four interties with other water suppliers that also could be used. (Bottled water will be trucked into the service area for drinking purposes).

Terrorism

Vaughn Water Company has taken several steps to minimize the effects of an act of terrorism on the Company's supply and distribution system. All of the locks at the well and treatment plant sites have been changed and the keys limited to Company personnel only. The major water production sites are equipped with an intruder alarm system. These sites have battery backups that keep the alarm system running during power outages. Each site is visited daily and the Company does not allow unauthorized visitors access to the sites. The operation staff tests the

chlorine residuals at each site daily and several weekly bacteria tests are taken throughout the distribution system. The Company also has a state approved Emergency Response Plan and a Vulnerability Assessment Plan that can used for all types of problems from power outages to an act of terrorism.

8.6 Revenue Impact

Since the present residential customer is billed using a minimum base rate for a set amount of usage, the affects on revenue are likely to be minimal. There are additional costs to be incurred for enforcement of reduction plans beyond the 15% reduction level. (The Company would plan to counter the cost of increased water conservation efforts by rate modification).

8.7 Ordinance and Use Monitoring Procedure

Since 1984 the Vaughn Water Company Board of Directors has required all new services to be metered. The Company's flat rate services are being converted to meters when the property is sold. The Company currently stands at 90% metered 10% flat rate. It is believed meters help to promote conservation and the Company and the customers can at least track the actual usage. Becoming fully metered will help the Company design rate structures for the future that will also help with conservation.

In 1991 the Company's Board of Directors approved the procedure for Controlling Water Wasting. Vaughn Water Staff looks for water wasting during the normal course of daily operations,

and the Company also investigates and takes the appropriate action on all customer wasting water complaints.

The Company's Billing Department checks water use through its billing software program. The program looks for unusually high water usage. After these are identified and re-checked, they are turned over to the Operations Department for investigation. The staff then meets with the customer to help locate the problem and/or to counsel the customer on ways to conserve.

The Company will continue to look for ways to minimize water wasting.

8.8 Supply and Demand Comparison Provisions

Supply and Demand Comparison

The following tables present the current and projected water demands. The projection is based on the past use shown on the attached chart. The demands are projected through 2030. Since demand is met by pumping from groundwater storage and is relatively unaffected by short-term shortages, it is assumed that ground supply meets demand.

Table 8-4 Retail: Minimum Supply Next Three Years

	2016	2017	2018
Available Water Supply	6,942.3	6,479.4	6,479.4

NOTES: All figures are in (MG) million gallons.

CHAPTER 9

DEMAND MANAGEMENT MEASURES

9.1 Demand Management Measures

Vaughn Water Company continues to implement both management and technical practices to promote and establish water conservation. These practices are as follows:

A. Water Survey Programs for Single Family Residential and Multi-Family Residential Customers

The Operations Staff works with individual and groups of customers to promote water conservation. Water surveys are triggered by high usage meter readings, low pressure complaints, and customers who call regarding a water bill. Surveys with the customers include the following:

1) Reviewing historical water usage for the property with the customer
2) Inspecting and identifying any leaks on property
3) Checking irrigation system for efficient seasonal watering schedule
4) Checking flow rates and pressure at hose bibs, shower heads, sink faucets, and toilets
5) Educate customers how to read a water meter and calculate usage
6) Test meters for accuracy

Follow up surveys are performed and contact is made with the customers to verify the reduction in usage.

B. Residential Plumbing Retrofit

State legislation effective January 1, 1992 requires the installation of efficient plumbing in new construction (1.6 GPF toilets; 2.5 GPM shower heads; 1.0 GPF urinals; and 2.2 GPM kitchen/bathroom faucets). 7,095 of our 9,956 connections are homes built after January 1, 1992, and utilize these water saving devices. Many of the homes built before 1992 have undergone some form of repair or remodel and may have had the less efficient toilets, shower heads, and faucets replaced. Vaughn Water Company provides conservation literature at our office, recommends the use of water saving devices, and offers toilet replacement rebates through the Save our Water organization.

C. System Water Audits, Leak Detection, and Repair

Vaughn Water Company staff reviews water production records and compares the amount of water produced against the billed consumption records to determine the amount of unaccounted for water. We are currently 95% metered and 5% flat rate. Usage by flat rate customers and our system flushing program are estimated conservatively. Our unaccounted for water consistently falls below 5%.

District water mains and meter connections are routinely inspected by meter readers, treatment operators, maintenance, and construction personnel. Leaks are repaired immediately by staff employees and/or contracted help.

D. Metering with Commodity Rates

The Company is currently 95% metered and 5% flat rate. Metered customers pay additional costs for water usage over the baseline allowance. Since 1984, the Vaughn Water Company Board of Directors mandated all new services would be metered. Flat rate accounts are retrofitted to meters when property ownership changes. A minimum of 50 meters will be retrofitted every year until all services are 100% metered.

The Company has also implemented a policy which allows smaller ¾" meters on properties 6,000 sqft. or less. These meters have lower flow capacity than the standard 1" meter. The ¾" meter rate has a lower baseline allowable usage and combined with the lower flow rate, encourages conservation of water. The ¾" meter policy is available for new subdivisions and can also be retrofitted to existing homes. The Company plans on restructuring the commercial billing rate in a further effort to encourage conservation of water beginning in 2007.

E. Large Landscape Conservation Programs and Incentives

Water usage by large landscape accounts are monitored on a weekly basis. Meters are read and checked for accuracy; usage is calculated and compared against historical usage. High usage accounts are checked for leaks and inefficient irrigation schedules. Many large landscape accounts are maintained by City of Bakersfield or County of Kern Landscaping Departments, where the irrigation system is monitored electronically and the irrigation schedule set by experienced specialists. Rebates for turf replacement are promoted and offered by Save our Water organization.

Landscape watering literature is available at our office and conservation tips are included in our annual letters that promote water conservation.

F. High Efficiency Washing Machine Rebate Programs

The Company does not offer rebates for the purchase of high efficiency washing Machines. Conservation literature available at the office recommends the use of high efficiency washing machines. Vaughn Water Company staff encourages those purchasing these machines to pursue rebates offered by the manufacturer and by Pacific Gas & Electric Company for energy star approved appliances.

G. Public Information Programs

Information is currently made available to the public through our Annual Consumer Confidence Report mailing, and other literature at our office. Comments and advisories are also printed on our billing statements. Public information regarding conservation is offered on our website and through bill inserts for added public notification.

H. School Education Programs

Water quality and water conservation literature is made available to students when requested. Additionally, the Kern County Water Agency provides water conservation programs supported by pump taxes paid by Vaughn Water Company.

I. Conservation Programs for Commercial, Industrial, and Institutional Accounts

3% of our accounts are categorized as Commercial and Industrial. These accounts are metered and the Company restructured the commercial billing rate in 2007 to encourage conservation. The majority of these accounts use ultra low flush toilets, low flow 1 GPF urinals, and water saving devices as required by state legislation January 1, 1992.

J. Wholesale Agency Programs

Vaughn Water Company is not a wholesale water provider.

K. Conservation Pricing

Vaughn Water Company offers a baseline usage allowance determined by meter size and capacity. To promote conservation, usage in excess of the baseline is charged by the cubic foot.

The Company has also implemented a policy which allows smaller ¾" meters on properties 6,000 sq. ft. or less. These meters have lower flow capacity than the standard 1" meter. The ¾" meter rate has a lower baseline allowable usage and combined with the lower flow rate, encourages conservation of water. The ¾" meter policy is available for new subdivisions and can also be retrofitted to existing homes. The Company restructured the commercial billing rate in 2007 and the residential billing rate in 2011 in an effort to encourage conservation.

L. Water Conservation Coordinator

The Company does not currently have a designated water conservation coordinator. However, the operations supervisor, operations technical assistant, and water patrol operators devote 10% -20% of their time to addressing water conservation concerns. Water Conservation information is provided to the public through literature available at our office, on our website, the annual Consumer Confidence Report, and by suggestions noted on regular billing statements.

M. Waste Water Prohibition

The Company maintains a strict, documented program to control wasting water. The policy applies to both metered and flat rate customers and prohibits flooding and run off on sidewalks and streets. The Company procedures to stop wasting water range from warning letters showing ways to eliminate wasting to discontinuing water service. The policy also has provisions to install meters on flat rate services that waste water.

N. Residential Ultra Low Flow Toilet Replacement Program

Vaughn Water Company offers a residential ultra low flow toilet replacement program through the "Save our Water" organizations rebate program.

9.2 Evaluation of Demand Management Measures

Table 33
Demand Management Measures

Vaughn Water Company				
Demand Management Measures Program				
	Demand Management Measure	**Implemented**	**Not Implemented**	***Planned Implementation Date***
1	Water survey programs for sfr & mfr customers.	X		
2	Residential plumbing retrofit.		X	***NOT PLANNED***
3	System water audits, leak detection and repair.	X		
4	Metering with commodity rates for all new connections and retrofit of existing connections.	X		
5	Large landscape conservation programs and incentives.	X		
6	High-efficiency washing machine rebate programs.		X	***NOT PLANNED***
7	Public information programs.	X		
8	School education programs.	X		
9	Conservation programs for commercial, industrial and institutional accounts.	X		
10	Wholesale agency programs.			***N/A***
11	Conservation pricing.	X		
12	Water conservation coordinator.	X		
13	Water Waste prohibition.	X		
14	*Residential ultra-low flush toilet replacement programs.*	*X*		

CHAPTER 10

10.1 Plan Adoption, Submittal, and Implementation

Vaughn Water Company presented the updated Urban Water Management Plan for approval and adoption at the Company's Special Board meeting held on June 28, 2016. Customers and shareholders had approximately 27 days to review the plan before the meeting. After the plan was approved and adopted at the meeting, it was submitted to the California State Department of Water Resources on June 30, 2016. This 2015 Urban Water Management Plan will be implemented on the day following adoption by the Vaughn Water Company Board of Directors. The resolution of adoption is appended hereto.

Table 10-1 Retail: Notification to Cities and Counties

City Name	60 Day Notice	Notice of Public Hearing
Add additional rows as needed		
City of Bakersfield	☑	☑
Rosedale Rio Bravo	☑	☑
	☐	☐
County Name	**60 Day Notice**	**Notice of Public Hearing**
Add additional rows as needed		
Kern County	☑	☑
	☐	☐

APPENDIX A:

- MEMORANDUM OF UNDERSTANDING ROSEDALE RIO BRAVO WATER STORAGE DISTRICT
- APPENDIX 2 – ROSEDALE RIO BRAVO WATER STORAGE DISTRICT STUDY

MEMORANDUM OF UNDERSTANDING

This Memorandum of Understanding is entered into by and between ROSEDALE RIO BRAVO WATER STORAGE DISTRICT, a California Water Storage District, organized and existing under Division 14 of the California Water Code ("District") and VAUGHN WATER COMPANY, INC., a California Mutual Water Company, organized and existing under provisions of the California Corporations Code ("Company").

RECITALS

WHEREAS, the District was organized in 1959 and provides the water supply to landowners within its boundaries, principally by importation of water for recharge and groundwater stabilization, thereby enhancing the groundwater supply available for landowners within its boundaries; and

WHEREAS, the Company was organized in 1928 and since then has provided domestic water service to its shareholders and customers, principally in the greater Rosedale area, northwest of Bakersfield; and

WHEREAS, a significant portion of the Company's service area is located within the District and thereby the District enhances the groundwater supply available to landowners within that portion of the Company's service area, and the Company in turn has continued to act as agent for and exercise the rights of its landowners/shareholders to extract groundwater for their common benefit; and

WHEREAS, through this Memorandum of Understanding, the District and Company wish to confirm their understanding as to how certain matters related to planning and urban growth within their common boundaries will be administered.

AGREEMENT

NOW, THEREFORE, the Parties agree as follows:

1. The District through its Project providing for importation of water for recharge and groundwater stabilization to benefit the landowners within its District provides water which in turn the Company pumps for the benefit of its Shareholders for use within its service area. In carrying

out its Project, the District has stabilized and balanced groundwater conditions and it is the District's objective to continue to provide a balance water supply for all landowners within its boundaries, including the shareholders of the Company.

2. The District will cooperate with the Company in providing information and doing other things necessary and appropriate to facilitate the Company preparing and/or amending from time to time its Urban Water Management Plan (prepared pursuant to Chapter 3 of Part 2.6 of Title 6 of the California Water Code, commencing at Section 10620), its SB 610 Plan (Part 2.10 of Division 6 of the California Water Code, commencing at Section 10910) its SB 221 Plan (commencing Government Code Section 66473.7), and other applicable laws relating to planning for urban development and use of urban water supplies.

3. In coordinating and planning for new urban development within the Company through tracts or parcel maps, the following steps generally shall be observed.

A. The Company Manager prepares a "will-serve" letter, which is reviewed by the Company's Engineer and forwarded to the Company Board for approval.

B. If approved by the Company's Board, a copy of the will-serve letter is then transmitted to the requesting party and to the District Manager. In addition, the Company shall transmit to the District Manager calculations showing the estimated water usage for that particular tract, generally in the form illustrated at Exhibit A hereto.

C. The County and/or City may then ask the District Manager for confirmation of the available water supply. If so requested the District Manager shall respond affirmatively based on the information available to him.

D. The Company then prepares a Tract Agreement. An exhibit to the Tract Agreement, required to be executed prior to or upon recordation of a Final Tract Map, will be a "Transfers and Covenants Agreement", substantially in the form attached hereto as Exhibit B.

E. Upon receiving the Transfers and Covenants Agreement executed by the Developer, the Company shall execute same and forward to the District for its execution. Following the District executing the Transfers and Covenants Agreement, it shall cause same to be recorded and upon receiving a copy of the recorded document, transmit a copy to the Company.

The foregoing process shall not apply to individual applications for service to the Company, provided, from time to time the Company Manager shall keep the District Manager advised of any such individual connections and the estimated water usage of each.

The foregoing procedure in this Paragraph 3 may be modified from time to time to meet then existing conditions and requirements, as mutually agreed to by the District Manager and Company Manager.

IN WITNESS HEREOF the parties hereto have executed this Memorandum of Understanding this _____ day of June, 2005.

ROSEDALE RIO BRAVO WATER STORAGE DISTRICT,
a California Water Storage District

BY: Wesley Edwards

VAUGHN WATER COMPANY, INC.,
a California Mutual Water Company

BY: Michael L. Vaughn

Notification of Request for Water Service

VAUGHN WATER COMPANY

NOTIFICATION OF REQUEST FOR WATER SERVICE

Development Identification	Location Location (S/T/R)	Gross Area of Development (Acres)	Proposed Land Use (SFR, MFR, COMM, IND)	Average Lot Size (Acres)	Number of Lots	Estimated Water Demand Demand (AF/year)	Estimated Hot Water Use (AF/Year)

Transfers and Covenants Agreement

RECORDING REQUESTED BY
AND FOR THE OFFICIAL BUSINESS OF:

Rosedale-Rio Bravo Water Storage District

WHEN RECORDED MAIL TO:

Rosedale-Rio Bravo Water Storage District
849 Allen Road
Post Office Box 867
Bakersfield, CA 93302-0867

The undersigned grantor declares that the
Documentary Transfer Tax due is: None - no consideration

[X] Computed on full value of property conveyed, or
[ ] Computed on full value, less liens and encumbrances remaining at time of sale.
[X] Unincorporated area of County of Kern

APN:

TRANSFERS AND COVENANTS AGREEMENT

WHEREAS, _____, a corporation (the "Subdivider"), is the owner of the real property described on the attached Exhibit A (the "Property") and has obtained an approved tentative map for the subdivision of the Property under the Subdivision Map Act and the laws of the County of Kern, such subdivision being designated as Tract _____ (the "Tract"); and

WHEREAS, the Property is within the service area of VAUGHN WATER COMPANY, INC., a mutual water company organized and existing under and by virtue of the laws of the State of California (the "Water Purveyor"), the Water Purveyor will provide water service to the Tract, and each lot owner within the Tract will become a shareholder of the Water Purveyor; and

WHEREAS, the Water Purveyor has, without objection, provided water service by acting as agent for and exercising the rights of its shareholders to extract groundwater for their common benefit; and

WHEREAS, the Property is also within the boundaries of ROSEDALE-RIO BRAVO WATER STORAGE DISTRICT, a California water storage district organized and existing under and by virtue of Division 14 of the Water Code (the "District"), and the District has a project for the importation of water for recharge and groundwater stabilization for the benefit of the landowners within the District; and

WHEREAS, the Subdivider desires that the Water Purveyor exercise all of the Subdivider's rights to extract water from beneath the Property [and to transfer to the District all of the Subdivider's right, title and interest in and to all return water flows from the Tract];

NOW, THEREFORE, the Subdivider hereby agrees that the Water Purveyor, as agent for the owner of each lot within the Tract, may exercise all of the Subdivider's right, title and interest to extract water from beneath the Property, whether such right be overlying, appropriative, prescriptive,

contractual, or otherwise, for the purpose of providing water service to shareholders of the Water Purveyor within the Tract [and hereby transfers to the District all of the Subdivider's right, title and interest in and to all water return flows produced or to be produced by the owners of lots within the Tract, including all sewage effluent, for the purpose of maintaining balance of the District's groundwater resources.]

Neither the Subdivider nor any owner of a lot within the Tract shall extract, or attempt to authorize any other person to extract, any water from beneath the Property so long as the Water Purveyor provides water service to each lot within the Tract.

The foregoing transfers and covenants are made for the direct benefit of the Property and each lot within the Tract and shall run with the land.

Dated: _____, 2005

ROSEDALE RIO BRAVO WATER STORAGE DISTRICT,
a California Water Storage District

BY:_____

VAUGHN WATER COMPANY, INC.,
a California Mutual Water Company

BY:_____

EXHIBIT B

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

State of California

}

County of _____

On _____, 2005, before me, _____ Notary Public,
personally appeared _____;

☐ personally known to me
☐ proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

Witness my hand and official seal.

_____
SIGNATURE OF NOTARY PUBLIC

Place Notary Seal Above

OPTIONAL

ATTENTION NOTARY: Although the information requested below is OPTIONAL, it could prevent fraudulent attachment of this certificate to an unauthorized document.

CAPACITY CLAIMED BY SIGNER

_____
☐ CORPORATE OFFICER(S)

_____
TITLES

☐ PARTNER(S)
☐ LIMITED
☐ GENERAL

☐ ATTORNEY-IN-FACT
☐ TRUSTEE(S)
☐ GUARDIAN/CONSERVATOR
☐ OTHER: _____

DESCRIPTION OF ATTACHED DOCUMENT:

_____
[DOCUMENT TITLE]

_____
[NO. OF PAGES]

_____
[DATE OF DOCUMENT]

Signers Other Than Above:

_____

Signer(s) is/are representing:

_____

EXHIBIT B

CALIFORNIA ALL-PURPOSE ACKNOWLEDGMENT

State of California

}

County of _____

On _____, 2005, before me, _____ Notary Public,
personally appeared _____;

☐ personally known to me
☐ proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

Witness my hand and official seal.

_____
SIGNATURE OF NOTARY PUBLIC

Place Notary Seal Above

OPTIONAL

ATTENTION NOTARY: Although the information requested below is OPTIONAL, it could prevent fraudulent attachment of this certificate to an unauthorized document.

CAPACITY CLAIMED BY SIGNER

_____
☐ CORPORATE OFFICER(S)

_____
TITLES

☐ PARTNER(S)
☐ LIMITED
☐ GENERAL

☐ ATTORNEY-IN-FACT
☐ TRUSTEE(S)
☐ GUARDIAN/CONSERVATOR
☐ OTHER: _____

DESCRIPTION OF ATTACHED DOCUMENT:

_____
[DOCUMENT TITLE]

_____
[NO. OF PAGES]

_____
[DATE OF DOCUMENT]

Signers Other Than Above:

_____

Signer(s) is/are representing:

_____

EXHIBIT B

ROSEDALE-RIO BRAVO WATER STORAGE DISTRICT

CERTIFICATE OF ACCEPTANCE
(Gov. Code, § 27281)

THIS IS TO CERTIFY that the interest in real property conveyed by the instrument dated _____ from _____, a corporation, to ROSEDALE-RIO BRAVO WATER STORAGE DISTRICT, a California water storage district organized and existing under the by virtue of the provisions of Divisionl4 (commencing with section 39000) of the Water Code (the "District"), and VAUGHN WATER COMPANY, a mutual water company, is hereby accepted on behalf of the District by the Secretary of the District pursuant to authority conferred upon the Secretary in Resolution _____-, adopted on _____ and the District hereby consents to the recordation thereof.

Dated:_____, 2005

ROSEDALE-RIO BRAVO WATER STORAGE DISTRICT

By:_____
Royce Fast, Secretary

[Seal]

EXHIBIT B

APPENDIX 2
HYPOTHETICAL RRBWSD OPERATIONS ANALYSIS WITH KERN-TULARE, ARVIN-EDISON AND BVWSD BANKING PROGRAMS AND GLC PROGRAM

STUDY YEAR (1)	ANNUAL KERN RIVER INDEX (2)	PROJECTED SWP ENTLMNT ALLOC (3)	PROJECTED KERN RIVER DELIVERIES (4)	PROJECTED KR FLOOD DELIVERIES (5)	PROJECTED FK FLOOD DELIVERIES (6)	PROJECTED PIONEER FLOOD DELIVERIES (7)	RRBWSD SWP SUPPLY (8)	OTHER WATER PURCHASES (9)	EST. SAFE YIELD (10)	NET RRB SUPPLY FROM KT & AE (11)	ANNUAL NET RRBWSD SUPPLY (12)	EST FUTURE CONS USE (13)	GLC DELIV OBLIG (14)	8% EXPORT LOSS (15)	ANNUAL WATER DEMAND (16)	ANNUAL WATER BALANCE (17)	CUM WATER BALANCE (18)	IN-DISTRICT BALANCE			EXPORT BALANCE			ANNUAL IN-DIST RECHARGE (25)	ANNUAL BANKING RETURNS (26)	CUM LOSSES (27)
																		ANNUAL NET SUPPLY (19)	ANNUAL DEMAND (20)	CUM WATER BALANCE (21)	ANNUAL EXPORT SUPPLY (22)	ANNUAL DELIV OBLIG (23)	CUM WATER BALANCE (24)			
1	33	98%	0	0	0	0	29,434	7,962	11,870	0	48,143	74,092	0	0	74,092	-25,949	92,957	48,143	74,092	51,741	0	0	41,216	37,395	0	1,122
2	132	42%	49,975	0	0	0	12,558	0	11,870	22,455	94,982	73,928	0	0	73,928	21,053	114,010	94,982	73,928	72,794	0	0	41,216	109,408	1,200	5,277
3	19	97%	0	0	0	0	28,948	7,507	11,870	0	47,231	73,765	0	0	73,765	-26,534	87,476	47,231	73,765	46,260	0	0	41,216	7,507	30,065	6,370
4	151	72%	60,974	0	0	0	21,628	653	11,870	22,667	115,294	73,601	-3,500	-280	77,381	37,913	125,389	115,294	73,601	87,953	0	-3,500	37,716	131,421	8,300	12,041
5	91	26%	26,088	0	0	0	7,699	0	11,870	9,022	53,666	73,437	-2,500	-200	76,137	-22,472	102,918	53,666	73,437	68,182	0	-2,500	35,216	45,090	7,300	13,892
6	115	91%	39,956	0	0	0	27,089	5,767	11,870	10,702	93,200	73,274	0	0	73,274	19,926	122,844	93,200	73,274	88,108	0	0	35,216	85,278	9,600	17,070
7	168	86%	70,889	0	0	0	25,778	4,539	11,870	22,694	132,734	73,110	0	0	73,110	59,624	182,468	132,734	73,110	147,732	0	0	35,216	173,788	4,800	25,576
8	86	95%	23,362	0	0	0	28,276	6,878	11,870	0	68,632	72,946	0	0	72,946	-4,315	178,153	68,632	72,946	143,417	0	0	35,216	48,917	9,600	27,332
9	183	64%	79,597	34,659	0	11,358	18,987	0	11,870	13,510	165,642	72,783	-15,000	-1,200	88,983	76,659	254,812	132,023	72,783	202,657	30,846	-15,000	51,062	178,111	19,800	39,656
10	67	85%	12,171	0	0	0	25,298	4,089	11,870	0	52,181	72,619	0	0	72,619	-20,438	234,374	52,181	72,619	182,220	0	0	51,062	16,260	37,663	40,903
11	80	69%	19,847	0	0	0	20,631	0	11,870	0	51,134	72,455	-10,500	-840	83,795	-32,661	201,713	51,134	72,455	160,898	0	-10,500	40,562	19,847	36,662	42,117
12	55	44%	4,994	0	0	0	13,156	0	11,870	0	29,476	72,292	-6,000	-480	78,772	-49,296	152,417	29,476	72,292	118,082	0	-6,000	34,562	4,994	32,600	42,662
13	41	96%	0	0	0	0	28,587	7,170	11,870	0	46,554	72,128	0	0	72,128	-25,574	126,843	46,554	72,128	92,509	0	0	34,562	9,157	26,600	43,734
14	112	87%	38,437	0	0	0	25,938	4,689	11,870	22,694	101,557	71,964	0	0	71,964	29,593	156,436	101,557	71,964	122,101	0	0	34,562	106,257	9,600	47,912
15	18	32%	0	0	0	0	9,568	0	11,870	0	21,151	71,801	-20,000	-1,600	93,401	-72,250	84,186	21,151	71,801	71,452	0	-20,000	14,562	0	41,800	48,199
16	32	79%	0	0	0	0	23,521	2,426	11,870	0	37,039	71,637	-9,000	-720	81,357	-44,318	39,869	37,039	71,637	36,854	0	-9,000	5,562	2,426	30,800	48,977
17	37	83%	0	0	0	0	24,757	3,583	11,870	0	39,360	71,473	0	0	71,473	-32,113	7,756	39,360	71,473	4,741	0	0	5,562	18,741	9,600	49,827
18	210	79%	88,612	52,273	4,000	17,130	23,521	2,426	11,870	22,694	216,889	71,310	-17,500	-1,400	90,210	126,679	134,435	162,303	71,310	95,734	50,083	-17,500	38,145	267,992	27,100	70,202
19	121	98%	43,598	0	0	0	29,293	7,830	11,870	17,497	107,667	71,146	0	0	71,146	36,521	170,956	107,667	71,146	132,256	0	0	38,145	107,668	9,600	74,298
20	245	74%	86,065	75,331	4,000	24,687	22,066	1,064	11,870	20,011	238,697	70,982	-18,000	-1,440	90,422	148,274	319,230	161,746	70,982	223,020	70,604	-18,000	90,750	283,719	22,800	97,258
21	57	50%	6,095	0	0	0	14,950	0	11,870	0	32,283	70,819	-9,000	-720	80,539	-48,255	270,975	32,283	70,819	184,484	0	-9,000	81,750	6,095	35,600	97,889
22	55	92%	5,361	0	0	0	27,583	6,229	11,870	0	49,868	70,655	0	0	70,655	-20,787	250,188	49,868	70,655	163,697	0	0	81,750	17,373	21,800	99,064
23	89	90%	24,944	0	0	0	26,761	5,459	11,870	2,105	69,424	70,491	0	0	70,491	-1,067	249,120	69,424	70,491	162,630	0	0	81,750	44,904	16,600	100,975
24	42	48%	0	0	0	0	14,352	0	11,870	0	25,791	70,328	-20,000	-1,600	91,928	-66,136	182,984	25,791	70,328	118,093	0	-20,000	61,750	0	41,800	101,405
25	50	21%	2,221	0	0	0	6,329	0	11,870	0	20,164	70,164	-16,000	-1,280	87,444	-67,280	115,704	20,164	70,164	68,093	0	-16,000	45,750	2,221	20,800	97,422
26	166	82%	69,443	0	0	0	24,638	3,471	11,870	25,809	132,304	70,000	0	0	70,000	62,304	178,008	132,304	70,000	130,397	0	0	45,750	164,174	9,600	105,274
27	136	69%	52,111	0	0	0	27,690	6,330	11,870	1,201	62,865	69,673	0	0	69,673	-6,808	185,297	62,865	69,673	157,126	0	0	27,750	42,010	11,800	111,804
28	76	93%	17,314	0	0	0	20,482	0	11,870	21,089	103,374	69,837	-18,000	-1,440	89,277	14,097	192,105	103,374	69,837	163,934	0	-18,000	27,750	102,365	27,600	110,153
29	313	71%	81,181	119,542	8,000	39,175	21,080	0	11,870	0	272,778	69,509	-18,000	-1,440	88,949	183,829	369,126	149,062	69,509	236,679	113,512	-18,000	123,262	284,723	27,600	138,437
30	87	99%	23,596	0	0	0	29,475	8,001	11,870	3,642	74,753	69,346	0	0	69,346	5,407	374,533	74,753	69,346	242,086	0	0	123,262	58,982	9,600	140,607
31	55	89%	5,178	0	0	0	26,596	5,305	11,870	0	47,836	69,182	0	0	69,182	-21,346	353,187	47,836	69,182	220,741	0	0	123,262	12,479	24,600	141,720
32	218	74%	88,057	57,298	4,000	18,777	22,066	1,064	11,870	25,530	222,925	69,018	-20,000	-1,600	90,618	132,307	485,494	163,466	69,018	315,188	54,556	-20,000	157,818	279,059	29,600	163,090
33	136	98%	52,111	0	0	0	29,194	7,738	11,870	23,501	121,743	68,855	-17,000	-1,360	87,215	34,528	520,022	121,743	68,855	368,076	0	-17,000	140,818	114,652	26,600	168,355
34	54	99%	4,443	0	0	0	29,739	8,247	11,870	0	53,026	68,691	0	0	68,691	-15,665	504,357	53,026	68,691	352,411	0	0	140,818	22,829	19,600	169,628
35	60	82%	8,177	0	0	0	24,638	3,471	11,870	0	47,068	68,527	0	0	68,527	-21,459	482,897	47,068	68,527	330,952	0	0	140,818	11,649	25,100	170,716
36	86	97%	23,053	0	0	0	29,046	7,599	11,870	0	69,777	68,364	0	0	68,364	1,413	484,311	69,777	68,364	332,365	0	0	140,818	50,098	9,600	172,507
37	36	28%	0	0	0	0	8,372	0	11,870	0	19,991	68,200	0	0	68,200	-48,209	436,102	19,991	68,200	284,156	0	0	140,818	0	11,800	172,758
TOTAL			1,107,850	339,103	20,000	111,127	829,723	129,499	439,190	286,826	3,187,199	2,632,402	-220,000	-17,600	2,870,002	317,197		2,838,869	2,632,402		319,602	-220,000		2,867,591	745,190	
AVERAGE	100	75%	29,942	9,165	541	3,003	22,425	3,500	11,870	7,752	86,141	71,146	-5,946	-476	77,568	8,573		76,726	71,146		8,638	-5,946		77,502	20,140	

Column Descriptions:

1. Study year.
2. Kern River Index based on synthetic 37-year period and 105-year recurrence parameters for historical Kern River flows.
3. Projected SWP allocation percentage based on synthetic 37-year period and DWR recurrence parameters published in 2002.
4. Projected Kern River contract and miscellaneous quantity water delivered to RRBWSD by the City.
5. Projected Kern River flood flows delivered to the District.
6. Projected Friant-Kern flood flows delivered to the District.
7. Projected Kern River flood flow deliveries made to the District's capacity on the Pioneer Project.
8. RRBWSD's SWP entitlement of 29,900 AF/year multiplied times the allocation percentage in Column 3.
9. Estimated purchases of SWP Article 21 water (average of 3,200 AF/year) and SWP Turnback Pool (average of 300 AF/year). Water is assumed to be available in increasing amounts in years of SWP allocation greater than 70 percent.
10. Estimated safe yield calculated based on 39,580 developed acres multiplied times 0.3 acre-feet/acre.
11. Additional water supplies to the RRBWSD from the Kern-Tulare and Arvin-Edison Banking programs. Appendix 2B, Column 5 + Appendix 2B, Column 9.
12. Total Net RRBWSD Supply equal to the sum of Columns 4 through 9 (less 3% evaporation losses) plus Columns 10 and 11.
13. Estimated future consumptive use based on 2002 District crop survey for Year 1 of the study and assuming increasing urban development in the future.
14. Return water deliveries made to MWD as a part of the GLC program. See Appendix 2D.
15. Additional export losses for the GLC program (additional 3% for banking and 5% for out of county). From Appendix 2D, Column 5.
16. Annual Water Demand equal to sum of Columns 13, 14 and 15.
17. Annual Water Balance equal to Column 12 minus Column 16.
18. Cumulative Water Balance equal to prior year Column 18 plus Column 17. Initial water balance equal to Column 21 + Column 24.
19. Annual Net In-District Supply equal to sum of Columns 4, 7, 8 and 9 (less 3% evaporation losses) plus Column 10 and Column 11.
20. Total In-District Demand equal to Column 13.
21. Cumulative In-District Water Balance equal to prior year Column 21 plus Column 19 minus Column 20. Initial balance equal to water balance from Appendix 1 less net 1995-2002 Kern River flood deliveries to District (122,610 - 46,310 x 0.97).
22. Total Exportable Supply equal to Columns 5 and 6 less 11% losses (6 percent banking and 5% out of county).
23. Return water deliveries made to GLC. Same as Column14.
24. Cumulative Exportable Water Balance equal to prior year Column 24 plus Column 22 minus Column 23. Initial water balance equal to 1995-2002 Kern River flood deliveries to District (46,310 AF) less 11% losses.
25. Annual In-District Recharge from Appendix 2A, Column 13.
26. Annual Banking Returns from Appendix 2F, Column 5.
27. Projected cumulative losses due to future operations of all proposed programs (from Appendix 2E, Column 6).

APPENDIX B

- GROUNDWATER DEPTHS

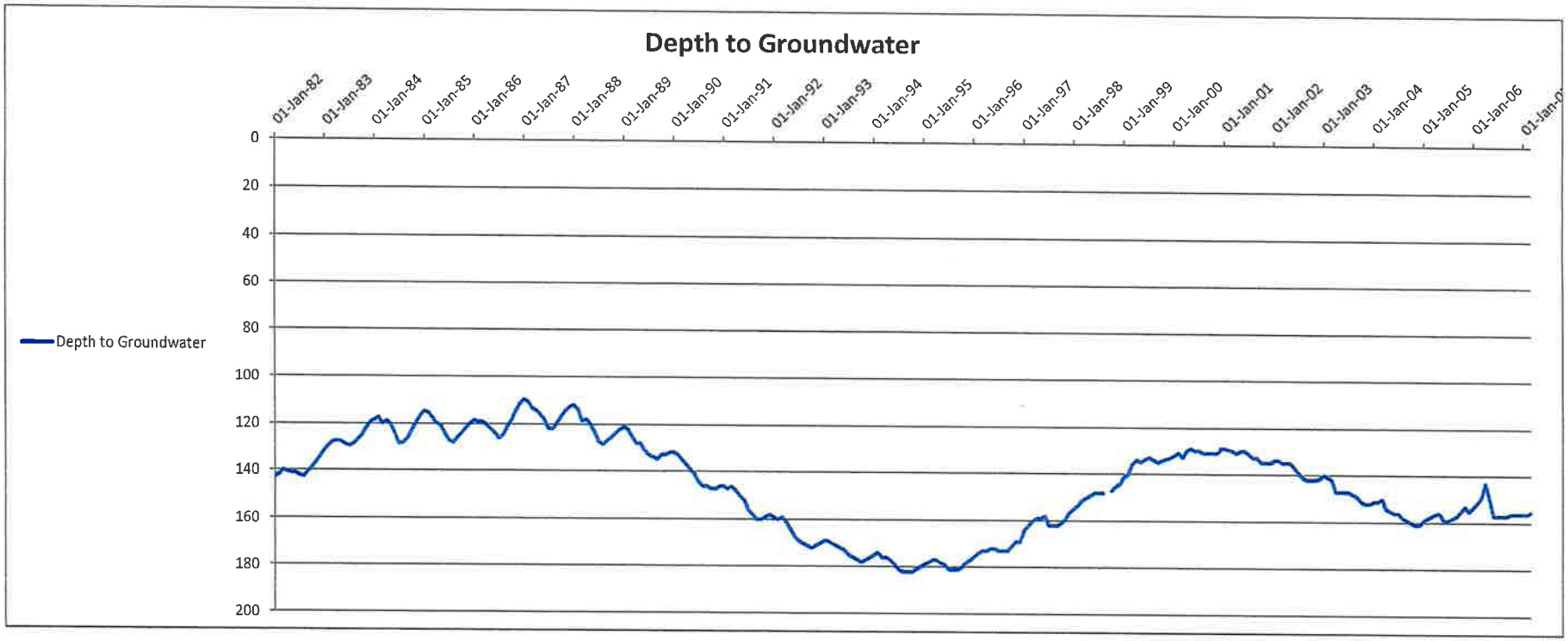
FIGURE 1 – HYDROGRAPH KRAUSE WELL 29/26-15H1

FIGURE 2 – HYDROGRAPH JEWETTA WELL 29/27-30D50

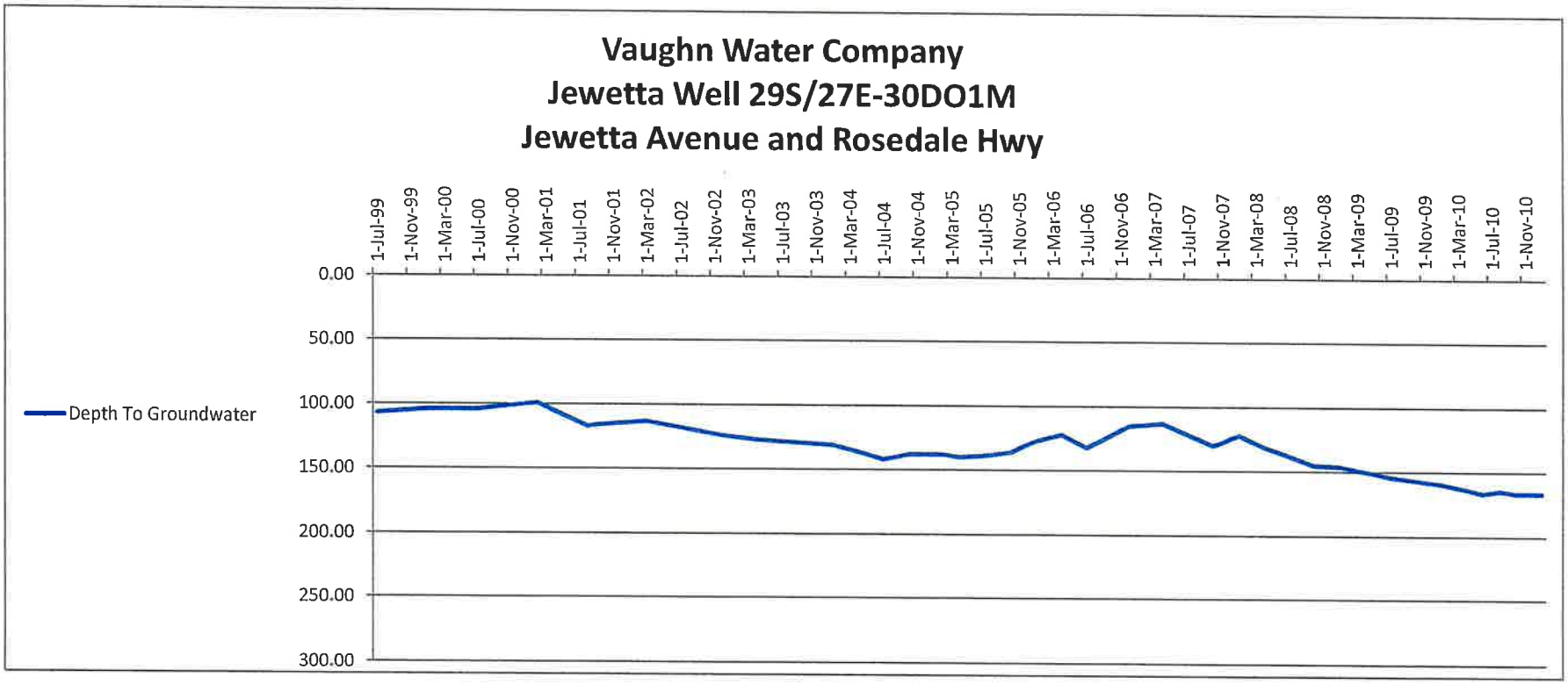
APPEND

FIGURE 1

ROSEDA[illegible]O BRAVO
KRAUSE [illegible]9/26-15H1



FIGU ?


Vaughn Water Company
Jewetta Well 29S/27E-30DO1M
Jewetta Avenue and Rosedale Hwy
Depth To Groundwater
0.00
50.00
100.00
150.00
200.00
250.00
300.00
1-Jul-99
1-Nov-99
1-Mar-00
1-Jul-00
1-Nov-00
1-Mar-01
1-Jul-01
1-Nov-01
1-Mar-02
1-Jul-02
1-Nov-02
1-Mar-03
1-Jul-03
1-Nov-03
1-Mar-04
1-Jul-04
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1-Nov-05
1-Mar-06
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1-Nov-06
1-Mar-07
1-Jul-07
1-Nov-07
1-Mar-08
1-Jul-08
1-Nov-08
1-Mar-09
1-Jul-09
1-Nov-09
1-Mar-10
1-Jul-10
1-Nov-10

APPENDIX C

- VAUGHN WATER COMPANY RESOLUTION No.15-02

RESOLUTION BEFORE THE BOARD OF DIRECTORS OF THE

VAUGHN WATER COMPANY

IN THE MATTER OF: **RESOLUTION NO. 15-02**

ADOPTING EMERGENCY WATER CONSERVATION REGULATIONS AS DIRECTED BY THE GOVENOR'S EXECUTIVE ORDER SIGNED APRIL 25, 2014

WHEREAS, on January 17, 2014, Edmund G. Brown, Governor of California, proclaimed a State of Emergency to exist in the State of California due to severe drought conditions; and

WHEREAS, on April 25, 2014, the governor signed an Executive Order directing the State Water Board to adopt emergency regulations as it deems necessary, pursuant to California Water code section 1058.5, to ensure that urban water suppliers implement drought response plans to limit outdoor irrigation and other wasteful water practices; and

WHERAS, California Water Code section 1058.5 grants the State Water Board the authority to adopt emergency regulations during a period when the Governor has issued a proclamation of emergency based upon drought conditions or in response to drought conditions that exist, or are threatened, in a critically dry year immediately preceded by two or more consecutive below normal, dry, or critically dry years; and

WHEREAS, on July 15, 2014, the State Water Board approved an emergency regulation for urban water conservation that required urban water suppliers to implement the state of its water shortage contingency plan that imposes restrictions on outdoor irrigation, which resulted in Vaughn Water Company Stage 2 of its Urban Water Management Plan; and

WHEREAS, as of March 3, 2015, Central and Southern Sierra snowpack is at 20 and 21 percent of average, respectively, and without significant March snowfall, the Sierra snow water content may be the lowest in recorded history; and

WHEREAS, due to these drought conditions and dry conditions for the past several years, storage in California's reservoirs is also at below average levels; and

WHEREAS, on March 17, 2015, the State Water Board found that an emergency still exists due to severe drought conditions and that adoption of additional emergency regulations with specific prohibitions on water uses was necessary to promote water conservation to maintain an adequate supply during the drought emergency; and

WHEREAS, the emergency regulation approved by the State Water Board requires urban water suppliers that do not already impose a limit on the number of days that outdoor watering is allowed to limit outdoor irrigation of turf and ornamental landscapes; and

WHEREAS, Vaughn Water Company currently does not impose a limit on the number of days that outdoor watering is allowed, so Vaughn Water Company must adopt this ordinance limiting the number of days that outdoor watering is allowed; and

WHEREAS, the April 2014 Executive Order suspended the requirement for review under the California Environmental Quality Act (CEQA) for certain activities, including adoption of emergency regulations, and on December 22, 2014, Executive Order B-28-14, extended the suspension of CEQA through May 31, 2016; and

WHEREAS, this Resolution is necessary for the immediate preservation of the public health, peace, property, and safety.

NOW, THEREFORE, BE IT RESOLVED AND ORDERED BY THE VAUGHN WATER BOARD OF DIRECTORS as follows:

1. The above recitals are true and correct.
2. The Vaughn Water Company policies regarding water regulation and rules, prohibition on the wasteful use of water, and enforcement methods for obtaining water use reductions shall hereby include the following:

Water Use Regulations

A. Outside Irrigation.

1. In addition to the rules and regulations promulgated by the State Water Resources Control Board relative to water usage, outside irrigation of ornamental landscapes or turf with potable water is allowed by water users a maximum of **three days per week as follows:**
   - Water users with **EVEN** addresses may water on **Sunday, Wednesday, and Friday** only.
   - Water users with **ODD** addresses may water on **Tuesday, Thursday, and Saturday** only.
   - All outside irrigation is prohibited on Mondays.
2. Outside irrigation is advised to be done after 6:00 p.m. and before 9 a.m. for optimal efficiency.
3. Commercial, industrial, and industrial properties, such as campuses, parks, and public greenbelt areas, shall immediately implement water efficiency measures to reduce potable water usage in an amount consistent with the reduction targets of the State Water Resources Control Board.

B. Penalty.

1. Failure to comply with these regulations shall be subject to penalties as stated in Article VII Section (i) of the Company By-Laws and may be punishable as an infraction or misdemeanor pursuant to Bakersfield Municipal Code Section 1.40.010.

3. This Emergency Regulation shall take effect beginning April 23, 2015.

I HEREBY CERTIFY *that I am the Secretary-Treasurer of the Vaughn Water Company, a California Corporation and that the foregoing resolution was adopted by the Board of Directors of Vaughn Water Company at a meeting held on the 14th day of April, 2015.*

IN WITNESS THEREOF, *I have hereto subscribed my name and affixed the seal of this Corporation on this 14th day of April, 2015.*

Joshua Divelbiss

Secretary-Treasurer

APPENDIX D

- PUBLIC NOTIFICATION

PROOF OF PUBLICATION

The BAKERSFIELD CALIFORNIAN
P.O. BOX 440
BAKERSFIELD, CA 93302

VAUGHN WATER CO
10014 GLENN ST
BAKERSFIELD, CA 93312

RECEIVED
MAY 05 2016
By

--

STATE OF CALIFORNIA
COUNTY OF KERN

I AM A CITIZEN OF THE UNITED STATES AND A RESIDENT OF THE COUNTY AFORESAID: I AM OVER THE AGE OF EIGHTEEN YEARS, AND NOT A PARTY TO OR INTERESTED IN THE ABOVE ENTITLED MATTER. I AM THE ASSISTANT PRINCIPAL CLERK OF THE PRINTER OF THE BAKERSFIELD CALIFORNIAN, A NEWSPAPER OF GENERAL CIRCULATION, PRINTED AND PUBLISHED DAILY IN THE CITY OF BAKERSFIELD COUNTY OF KERN,

AND WHICH NEWSPAPER HAS BEEN ADJUDGED A NEWSPAPER OF GENERAL CIRCULATION BY THE SUPERIOR COURT OF THE COUNTY OF KERN, STATE OF CALIFORNIA, UNDER DATE OF FEBRUARY 5, 1952, CASE NUMBER 57610; THAT THE NOTICE, OF WHICH THE ANNEXED IS A PRINTED COPY, HAS BEEN PUBLISHED IN EACH REGULAR AND ENTIRE ISSUE OF SAID NEWSPAPER
AND NOT IN ANY SUPPLEMENT THEREOF ON THE FOLLOWING DATES, TO WIT: 4/29/16

ALL IN YEAR 2016

I CERTIFY (OR DECLARE) UNDER PENALTY OF PERJURY THAT THE FOREGOING IS TRUE AND CORRECT.

DATED AT BAKERSFIELD CALIFORNIA
5.3.16

Ad Number:	14132746	**PO #:**	
Edition:	1TBC	**Run Times**	1
Class Code	Legal Notices		
Start Date	4/29/2016	**Stop Date**	4/29/2016
Billing Lines	15	**Inches**	90.92
Total Cost	$ 68.73	**Account**	1VAU01
Billing Address	VAUGHN WATER CO 10014 GLENN ST BAKERSFIELD,CA 93312		

Solicitor I.D.: 0

First Text
SPECIAL BOARD MEETING NOTICENotice is he

Ad Number 14132746

SPECIAL BOARD MEETING NOTICE
Notice is hereby given that a Special Meeting of Vaughn Water Company will be held at the office of the Company, 10014 Glenn Street, Bakersfield, CA on Tuesday, June 28, 2016 at 7:30 p.m.
At this meeting, the Company's 2015 Urban Water Management Plan shall be approved and other business may be transacted which is within the powers of the shareholders. The draft plan will be available for review at the Company's office on June 1, 2016.

April 29, 2016
14132746

APPENDIX E

- VAUGHN WATER COMPANY RESOLUTION 16-1 ADOPTING 2015 UWMP

RESOLUTION OF THE BOARD OF DIRECTORS

OF

VAUGHN WATER COMPANY

Resolution 16-1

A RESOLUTION ADOPTING

THE 2015 URBAN WATER MANAGEMENT PLAN

WHEREAS, the California State Department of Water Resources working under the Urban Water Management Planning Act; and

WHEREAS, the Act mandates that every urban water supplier providing municipal water directly or indirectly to more than 3,000 acre feet of water annually to develop a 2015 Urban Water Management Plan; and

WHEREAS, Vaughn Water Company is an urban supplier of more than 3,000 acre feet of water annually, and has therefore prepared and circulated for public review a Draft 2015 Urban Water Management Plan, in compliance with the requirements of the Act, and a properly noticed shareholder's meeting regarding said plan was held by Vaughn Water Company and a final plan prepared.

NOW, THEREFORE, BE IT RESOLVED by the Vaughn Water Company Board of Directors as follows:

1. The 2015 Urban Water Management Plan is hereby adopted and put into effect.

2. The General Manager is hereby authorized and directed to file this plan with the California Department of Water Resources.

I HEREBY CERTIFY that the foregoing resolution is the resolution of said Company as duly passed and adopted by said Board of Directors on the 28th day of June, 2016.

WITNESS my hand and seal of said Board of Directors this 28th day of June, 2016.

Joshua Divelbiss
President